

ABSTRACT

The present invention is to provide meiosis-specific novel kinetochore protein Sgo1 (shugoshin) derived from fission yeast *Schizosaccharomyces pombe*, and a homologue or paralogue thereof having a regulatory activity of chromosome segregation; and DNAs encoding them; as a factor ensuring the retention of unidirection and cohesion in sister centromere at meiosis I in cooperation with cohesin. To elucidate the proteins protecting Rec8 during anaphase, the present inventor screened in fission yeast genes for a gene that inhibits mitotic growth and prevents sister chromatid from the separation at anaphase, when co-expressed with Rec8. In this approach, meiosis-specific protein Sgo1 that protects (Shugo) centromeric Rec8 from the degradation at anaphase I was indentified. Further, a budding yeast Sgo1 homologue and a fission yeast mitotic paralogue Sgo2 were identified.